

## CFC Smuggling

A year after the United States banned the production and importation of most chlorofluorocarbons (CFCs), the illegal importation of CFCs—which destroy the stratospheric ozone that protects the earth from ultraviolet radiation—continues to thrive. The United States implemented the ban on CFCs as part of the 1987 Montreal Protocol, a treaty signed by 150 countries calling for an eventual international ban on CFCs. The U.S. ban took effect 31 December 1995.

One of the most commonly used CFCs is CFC-12, or R-12, manufactured by DuPont and often referred to by its registered trade name, freon. Freon is used in the air-conditioning systems of most cars manufactured before 1994. Although the ban included usage allowances for existing freon (which let U.S. citizens purchase and use freon that was manufactured before 1996 or that had been recycled), this supply is dwindling, causing the cost to increase. Martin Topper, a staff member of the Director's Office of Criminal Enforcement, Forensics, and Training at the EPA, estimates that the domestic supply of freon will last for another one or two years. "The clock is running short," he said.

The EPA has approved many alternatives to freon for automotive air-conditioning systems, most of which use hydrochlorofluorocarbons (HCFCs). However, the cost of altering air-conditioning systems to use new coolants can be as high as \$1,200 per car, says Frank Allison, executive director of the International Mobile Air-Conditioning

Association. Allison estimates that only about 10% of cars with systems designed to use freon have been adjusted to use alternative coolants.

The combination of high price, decreasing supply, and high demand of freon has prompted the illegal importation of the CFC, which is still being produced in several countries. The black market for freon began to develop years before the ban, when the government began a phaseout of CFCs. In 1992, the EPA began to set "consumption allowances," or annual limits on the manufacture and importation of CFCs. Each year, the limits were reduced in an attempt to encourage recycling and the development of alternative coolants, as well as to discourage attempts to stockpile CFCs before the impending ban. Congress also imposed a significant excise tax on the sale or use of CFCs, which has risen from \$3.35 per pound in 1993 to \$5.35 per pound in 1996.

Despite efforts to discourage illegal importation and use of freon, the trade continues. "Between 1994 and 1996, we have clear evidence that 4,300 tons [of freon] was illegally imported, and we seized as much of that as we could," Topper said. He says it is difficult to estimate the total amount of freon being imported because it is contraband. Topper says that the illegal trade is thriving because of the large financial incentive. Freon can be purchased overseas for about \$1.00–\$2.00 per pound and then sold in the United States for \$20.00–\$25.00 per pound, he said. Legal domestic freon sells for about \$20.00 per pound.

Florida and Texas have experienced much of the illegal activity. In response, special agents of the Customs Service, the Internal Revenue Service, and the EPA have formed a multiagency enforcement effort based in Miami, named "Operation Cool Breeze." Thus far, the effort has resulted in the prosecution of more than a dozen people who have violated customs laws, the Clean Air Act, and tax laws. In Texas, the U.S. Customs Service has begun "Operation Frio Tejas" to stop the smuggling of freon into Texas from Mexico. So far, this effort has resulted in the arrest and indictment of three individuals and the seizure of several thousand pounds of freon. When convicted of smuggling freon, criminals face large fines and heavy tax penalties. "In some cases, we're talking about millions and even tens of millions of dollars in tax liability," Topper said.

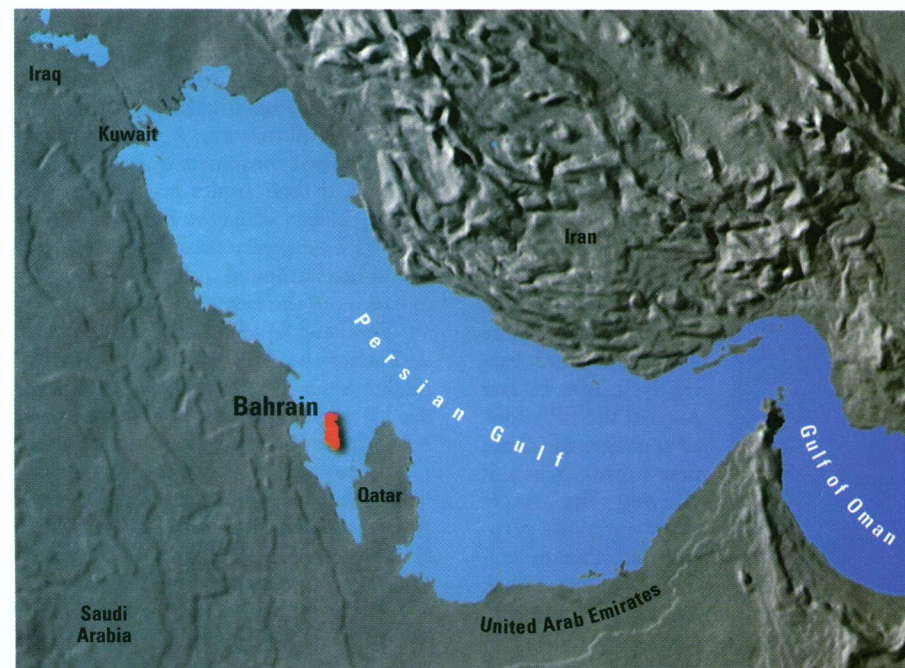
In addition to concerns about environmental protection, Topper added that the illegal importation of freon poses other concerns. "Anything purchased on the black market can be of questionable purity and may be harmful to air conditioners," he said. "The public really needs to know that installing illegal freon could possibly damage their air-conditioning systems and might even cause injuries.

"For the sake of safety and health, people should be careful that the freon [they use] has been recycled or otherwise legally obtained in this country," Topper continued. He said this can be ensured by dealing with reputable automotive repair facilities.

## Going Green in the Gulf

Years of oil production and the recent war have generated widespread pollution in the Persian Gulf region. In an action unprecedented for countries in this area, Bahrain, a small country located on a group of 33 islands in the gulf, has recently passed comprehensive legislation to protect its environment.

"The new law has given us a legal instrument to facilitate the promotion of our environment, and to back up the enforcement of the polluter-to-pay principle and/or other fines, as well as to take the appropriate necessary measures in order to comply with the law," said Hasan Juma, a chemist with Bahrain's Environmental Protection Committee. According to *Environmental Profiles: A Global Guide to Projects and People*, Bahrain's major environmental problems have been caused by oil spills and industrial discharges, particularly by the metal treatment industry. This pollution has caused the degradation of coastlines, coral reefs, and sea vegetation, and is threatening marine life in the Persian Gulf.



**Beginning in Bahrain.** This island nation has recently passed new environmental regulations unprecedented in the Persian Gulf region.



The law, made effective 13 July 1996, contains 33 articles detailing environmental provisions. It delegates the authority to enforce the new law to Bahrain's environmental protection agency, and states that the agency should take the necessary steps to protect the environment. The law also states that a director general is to be appointed by the emir of Bahrain to oversee the environmental regulations.

Among the provisions is the establishment of a new facility to be a laboratory for the environment. The law also calls for an environmental education system and the development of programs to train people to work in environmental affairs. In addition, the law mandates a survey of environmental conditions in Bahrain and the development of a program to solve environmental problems. The law suggests that the environmental protection agency look at existing international research, regulations, and agreements in developing programs and regulations for Bahrain.

The law states that the environmental protection agency must work with other government agencies to set standards to protect the environment and human health in areas such as the use of machinery, the use of pesticides, construction, and the production and use of hazardous materials. It also stresses the importance of worker safety; companies must obtain permission from the environmental protection agency to use hazardous materials and, in workplaces where such materials are used, a list of the materials must be posted. In addition, industries must properly treat waste, and projects must be assessed for environmental impacts.

Under the law, industries that violate the law may be imprisoned and fined an amount not to exceed 50,000 dinar (about \$100,000). In addition, violators can be shut down until they comply with regulations.

## Novel Estrogen Receptor Discovered

Jan-Ake Gustafsson of the Karolinska Institute in Sweden dropped a bomb on attendees at a conference earlier this year in Lake Tahoe when he announced the discovery of a novel estrogen receptor in the rat prostate and ovary. Gustafsson was scheduled to speak on a different topic, but chose instead to give his audience a sneak preview of the unexpected findings uncovered by his research group in Sweden. Prior to the recent discovery, scientists believed there was only one estrogen receptor, and only one gene for that receptor.

Estrogen receptors belong to the family of nuclear receptors that are ligand-activated transcription factors. Hormones and other

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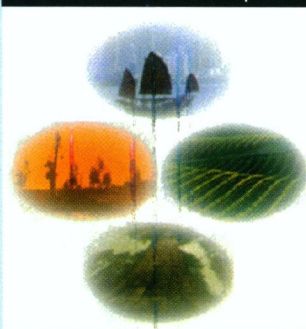
### Joining the Great Asia Debate

Throughout Asia and the Pacific, countries eager to realize the high standard of living enjoyed in countries like Singapore and Taiwan are scurrying to put together the manufacturing and trade bases necessary for a profitable existence in the modern world. Policy experts in Asia, however, are beginning to wonder what price these countries are willing to pay for development. Unprecedented environmental degradation has been seen recently in parts of Southeast Asia, and many worry that in their quest for wealth, Asian countries will sacrifice their natural resources. "The debate over linkage between trade and the environment continues unabated," writes Bunn Nagara of the Malaysian Institute of Strategic and International Studies, a government think-tank. "One consequence seemed only inevitable: no multi-lateral [environmental] regulatory code exists, or appears likely to emerge in the foreseeable future. Neither is there agreement that there [should] be such a code impinging on trade."

As development in the nations of Southeast Asia moves forward, the Nautilus Institute, a policy-oriented research and consulting group based in Berkeley, California, is making an effort to facilitate international discussion and cooperation on issues relating to the environment and sustainable development. The centerpiece of this effort is the Asia-Pacific Environment Network, known as APRENet. Located on the World Wide Web at <http://www.nautilus.org/aprenet/index.html>, APRENet provides the latest information and reports on the Asian environment and a forum for users to participate in ongoing debates over policies for Asia's future. APRENet resources include electronic bulletin boards, an on-line library, and links to related material.

Users are required to register for certain APRENet services by following the link on the APRENet homepage. They can then decide in which of APRENet's three main discussion groups they would like to participate. Separate electronic mail networks are maintained for issues concerning the Asian Pacific Economic Cooperation forum (APEC), the development of the Mekong Region of Southeast Asia, and the development of the area surrounding the Tumen River (which runs along the border of China and North Korea). At present, however, only the APEC network is fully functional; the Mekong Region network is nearly

#### Asian Pacific Economic Cooperation



complete, and the Tumen River network is still in development. Registering to participate in these networks, called Virtual Policy Forums, allows users to receive biweekly news reports and op-ed pieces by electronic mail and to post their own insights and opinions for other users to read.

Even without registering, however, users who visit the APRENet homepage can access a variety of information. The APRENet electronic library, for example, contains over 75 documents, reports, speeches, and other on-line resources related to environmental issues in the Asia-Pacific region. In addition, there are sections on APEC, the Mekong area, and the Tumen River area in the library, as well as an extensive list of

links to sites maintained by APEC.

Additional information on APEC, as well as another way to access the APEC Virtual Policy Forum, can be found through the APEC Environment Monitor link on the APRENet homepage. Here, users will find a calendar of APEC meetings and seminars, links to related sites, facts on APEC, and an APEC database (though these last two resources are still under construction). Users can also follow the FOCUS on APEC link on the APRENet homepage to the FOCUS on the Global South homepage. FOCUS on the Global South is a sister network to APRENet that is maintained in Thailand and also collects and distributes information on APEC and other topics related to sustainable development.

The Nautilus homepage link offers information on Asian development outside the realm of APRENet, including links to networks focusing on peace and security, energy, and the environment in Northeast Asia.